

Although the copolymerization can be conducted by any of batchwise, semi-continuous and continuous processes, it is preferable to conduct the copolymerization continuously. The copolymerization may be conducted in two or more steps under
5 different reaction conditions.

The linear or long-chain branched ethylene/ α -olefin random copolymer preferably used in the invention is obtained by the aforesaid process, and the molecular weight of the resulting copolymer can be regulated by changing the
10 polymerization conditions such as polymerization temperature or controlling the amount of hydrogen (molecular weight modifier) used.

Preparation of graft modified ethylene/ α -olefin random
copolymer

15 The graft modified ethylene/ α -olefin random copolymer is prepared by graft copolymerizing the above-mentioned unmodified ethylene/ α -olefin random copolymer with a polar monomer. The polar monomer is, for example, a hydroxyl group-containing ethylenically unsaturated compound, an amino group-
20 containing ethylenically unsaturated compound, an epoxy group-containing ethylenically unsaturated compound, an unsaturated carboxylic acid, an anhydride or a derivative thereof, a vinyl ester compound, or vinyl chloride. Particularly, an unsaturated carboxylic acid or an anhydride thereof is
25 preferable.

006030-26370960

acetate. In addition, azo compounds, such as azobisisobutyronitrile and dimethylazoisobutyronitrile, are also employable.

Of these, dialkyl peroxides, such as dicumyl peroxide, di-tert-butyl peroxide, 2,5-dimethyl-2,5-di(tert-butylperoxy)hexyne-3, 2,5-dimethyl-2,5-di(tert-butylperoxy)hexane and 1,4-bis(tert-butylperoxyisopropyl)benzene, are preferable.

The radical polymerization initiator is preferably used in an amount of about 0.001 to 10 parts by weight based on 100 parts by weight of the ethylene/ α -olefin random copolymer.

As described above, the graft copolymerization reaction can be carried out in an organic solvent or without using any solvent. The resin dispersion of the invention is a dispersion comprising the ethylene/ α -olefin random copolymer dispersed in an organic solvent. When the reaction is carried out in an organic solvent, the reaction product can be used as it is or after further addition of the same or different kind of an organic solvent. When the reaction is carried out without using any solvent, the resin dispersion of the invention can be prepared by adding an organic solvent to the reaction product.

The organic solvent, which is added during or after the reaction to form an adhesive or the like, is not specifically restricted, and examples thereof include aromatic hydrocarbons,

In the resin dispersion of the invention, the diameters (measured by a Coulter Counter) of the solid particles of the graft modified ethylene/ α -olefin random copolymer are in the range of preferably 1 to 50 μm , particularly preferably 3 to 30 μm .

To the resin dispersion of the invention, known additives, such as pigment, filler and stabilizer, can be optionally added within limits not detrimental to the objects of the invention.

10 The resin dispersion of the invention can be prepared by,
for example, the following process. First, the graft modified
ethylene/ α -olefin random copolymer is mixed with an organic
solvent, and the mixture is heated to completely dissolve the
copolymer in the solvent. The temperature for dissolution is
15 usually in the range of 100 to 150°C. Then, the solution is
cooled to precipitate the modified ethylene/ α -olefin random
copolymer. For the precipitation, it is necessary to set
composition of the solvent so that the copolymer is
precipitated at a temperature of 50 to 90°C and to adjust the
20 average cooling rate during the precipitation to 1 to 20°C/hr,
preferably 2 to 10°C/hr. It is also available to dissolve the
copolymer in only a master solvent to perform precipitation,
followed by adding a poor solvent to perform further
precipitation.